AMENDMENTS TO THE CLAIMS

1. (Original) A balun having three lines, including a first line, a second line and a third line, arranged in parallel with the ground surface, wherein said second line and said third line are arranged at the same height from the ground surface, the longitudinal length of each respective one of said first line, said second line and said third line is specified to be equal to a quarter of the wavelength at the central frequency in the working band, and the capacitance between said second line and the ground surface is specified to be equal to the capacitance between said second line and said first line.

2. (Original) The balun as defined in Claim 1, wherein the distance between the center of each respective one of said second line and said third line in the direction of the height is specified to be longer than the distance between the center of said first line in the direction of the height and the center of each respective one of said second line and said third line in the direction of the height.

3. (Original) The balun as defined in Claim 1, wherein the permittivity of a dielectric between the plane formed by the center of each respective one of said second line and said third line in the direction of the height and the ground surface located closer to each respective one of said second line and said third line is specified to be less than the permittivity of a dielectric between the plane formed by the center of said first line in the direction of the height and the plane formed by the center of each respective one of said second line and said third line in the direction of the height.

4. (Currently Amended) The balun as defined in ~~any one of Claims~~ Claim 1 ~~through 3~~, wherein the length of each respective one of said second line and said third line in the direction of the width is specified to be equal, said second line and said third line are arranged symmetrically with regard to the plane formed by the center of said first line in the direction of the width, one terminal of said first line being assumed as an input terminal for unbalanced-mode signals is connected to one terminal of said third line as said input terminal for unbalanced-mode signals, the other terminal of said first line and one terminal of said second line are connected to

the ground surface respectively, and the other terminal of said second line and the other terminal of said third line are assumed as output terminals for balanced-mode signal, the impedance of said input terminal for unbalanced-mode signals and the impedance of said each output terminal for balance signals being specified to satisfy the following relationship defined below:

$$(Ca + Cac) / \varepsilon_0 = \varepsilon_r^{1/2} \times Z_{air} / (Z_{in} \times Z_{out})^{1/2}$$

where Ca is the capacitance (C) between said second line and the ground surface, Cac is the capacitance (C) between said second line and said third line, ε_0 is the permittivity in the vacuum, ε_r is the relative permittivity, Z_{air} is the characteristic impedance (Ω) in the vacuum, Z_{in} is the impedance (Ω) of said input terminal for unbalanced-mode signals, and Z_{out} is the impedance (Ω) of said output terminal for balanced-mode signals.

5. (New) The balun as defined in Claim 2, wherein the length of each respective one of said second line and said third line in the direction of the width is specified to be equal, said second line and said third line are arranged symmetrically with regard to the plane formed by the center of said first line in the direction of the width, one terminal of said first line being assumed as an input terminal for unbalanced-mode signals is connected to one terminal of said third line as said input terminal for unbalanced-mode signals, the other terminal of said first line and one terminal of said second line are connected to the ground surface respectively, and the other terminal of said second line and the other terminal of said third line are assumed as output terminals for balanced-mode signal, the impedance of said input terminal for unbalanced-mode signals and the impedance of said each output terminal for balance signals being specified to satisfy the following relationship defined below:

$$(Ca + Cac) / \varepsilon_0 = \varepsilon_r^{1/2} \times Z_{air} / (Z_{in} \times Z_{out})^{1/2}$$

where Ca is the capacitance (C) between said second line and the ground surface, Cac is the capacitance (C) between said second line and said third line, ε_0 is the permittivity in the vacuum, ε_r is the relative permittivity, Z_{air} is the characteristic impedance (Ω) in the vacuum, Z_{in} is the impedance (Ω) of said input terminal for unbalanced-mode signals, and Z_{out} is the impedance (Ω) of said output terminal for balanced-mode signals.

6. (New) The balun as defined in Claim 3, wherein the length of each respective one of said second line and said third line in the direction of the width is specified to be equal, said second line and said third line are arranged symmetrically with regard to the plane formed by the center of said first line in the direction of the width, one terminal of said first line being assumed as an input terminal for unbalanced-mode signals is connected to one terminal of said third line as said input terminal for unbalanced-mode signals, the other terminal of said first line and one terminal of said second line are connected to the ground surface respectively, and the other terminal of said second line and the other terminal of said third line are assumed as output terminals for balanced-mode signal, the impedance of said input terminal for unbalanced-mode signals and the impedance of said each output terminal for balance signals being specified to satisfy the following relationship defined below:

$$(Ca + Cac) / \varepsilon_0 = \varepsilon_r^{1/2} \times Z_{air} / (Z_{in} \times Z_{out})^{1/2}$$

where Ca is the capacitance (C) between said second line and the ground surface, Cac is the capacitance (C) between said second line and said third line, ε_0 is the permittivity in the vacuum, ε_r is the relative permittivity, Z_{air} is the characteristic impedance (Ω) in the vacuum, Z_{in} is the impedance (Ω) of said input terminal for unbalanced-mode signals, and Z_{out} is the impedance (Ω) of said output terminal for balanced-mode signals.